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**REMARKS**

The applicant has amended the claims to recite that the invention is used to detect differences in lignin levels between materials of the same color or of a different color, to clarify that the invention operates independently of color. The applicant submits that the claims patentably distinguish the invention over the cited references.

Howarth et al. is a color sorting system, and that is all. The method and apparatus of the present invention detects differences between the content of papers such as newsprint and regular white copy paper. Both newsprint and white copy paper would be identified as white in Howarth et al.'s sorting system, which sorts solely on the basis of color, whereas newsprint contains more lignin than white copy paper, giving it a "dull white look" and inferior quality.

The Examiner has cited Howarth et al. column 3, lines 3-10, which indicates that Howarth et al. provide two light sources, one for visible light and the other for UV light. But there is no indication in this paragraph or anywhere in Howarth et al. that UV light is used to detect lignin levels in the sheets of paper being sorted. Moreover, the mere presence of two separate light sources (UV and visible) does not imply that groundwood sheets are identified through the use of UV light.

The Examiner indicates that because Howarth et al. provide a UV light source, it is reasonable to assume their light detector detects both UV and visible light. But even if this were the case, Howarth et al. does not provide an optical filter disposed between the paper and the detector to eliminate components of diffusely reflected light outside the ultraviolet range, as claimed in the present claims. The Examiner has cited Howarth et al.'s lens 30 as purportedly satisfying this feature, but the applicant respectfully submits that this misconstrues the prior art. The Examiner must determine the actual scope and content of the prior art, and cannot characterize a lens as a filter merely because it brings cited prior art within an element in a claim. Howarth et al.'s lens 30 does not eliminate components of diffusely reflected light outside the ultraviolet range, which is how the present invention defines this "filter," and accordingly cannot qualify as a filter when construing the prior art (the applicant also points out that purely from an optics standpoint, a lens is not a filter and does not perform the function of filtering out undesirable wavelengths of light).

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Whether or not Howarth et. al. detect light that includes an ultraviolet component, detecting components of diffusely reflected light outside the ultraviolet range *precludes* the ability to distinguish between groundwood paper and other paper, which makes Howarth et al. a completely different apparatus having a completely different function. With respect, by characterizing Howarth et al.'s lens 30 as a filter the Examiner has found in the prior art an element which does not exist, and the Examiner has made no attempt to explain how this lens 30 in Howarth et al. eliminates components of diffusely reflected light outside the ultraviolet range.

Moreover, the Examiner indicates in paragraph 2 of his report, last 4 lines, that Howarth et al. teach a detector 32 for detecting UV light and generating an electrical signal proportional to an intensity of the detected ultraviolet light. The applicant does not see this taught or suggested anywhere in Howarth et al., and respectfully submits that this cannot be implied. The Examiner asserts that because Howarth et al. provide a UV light source, it is reasonable to assume their light detector detects both UV and visible light. If this is so, the applicant submits that it must also be assumed that the visible light source in Howarth et al. has some function and therefore Howarth et al.'s detector 32 detects the full range of light and generates an electrical signal proportional to an intensity of the entire detected spectral range. The applicant submits that the Examiner cannot make the assumption that Howarth et al. teach both visible and UV light sources for a reason – to infer that this element in the present claims is satisfied by Howarth et al. – but then make the assumption that the visible source will be ignored when Howarth et al. detect the light so produced. In the present application the detector generates an electrical signal proportional to an intensity of the detected ultraviolet light only. Therefore, this claimed element is also missing from Howarth et al.

The use of visible light makes Howarth et al. a completely different system operating in a different way to achieve a different purpose from the present invention. For example, Howarth et al. state that it is important that standard sheets be substantially the same as the sample sheets (col. 3, lines 53-56). This is not the case with the present invention, which uses a white copy paper as a reference for both white copy paper and groundwood-containing newsprint. The Howarth et al. disclosure clearly provides no method for differentiating paper made from groundwood pulp from paper made from chemical pulp. It simply measures the difference between the actual color of a sample and the color it should be.

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As noted above, for greater clarity the applicant has amended the claims to indicate that the invention is used to detect differences in lignin levels between both similarly and different colored sheets of paper. However, the applicant submits that the absence of any teaching of an optical filter disposed between the paper and the detector to eliminate components of diffusely reflected light outside the ultraviolet range, and generating an electrical signal proportional to an intensity of detected ultraviolet light, as claimed in the present application, in any event renders the present claims allowable over Howarth et al. and any other prior art.

Favourable reconsideration and allowance of the present claims are therefore respectfully requested.

The applicant notes that no communication has been received in connection with a decision in the Petition to add Sheldon Greenspan as an inventor in this application, and requests confirmation in that regard.

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